

## **REMARKS**

This paper is submitted in reply to the Office Action dated October 19, 2004. A request for a one-month extension of time has been submitted concurrently herewith, along with a check for the requisite fee of \$120.00. Therefore, the period of response extends up to and includes February 22, 2005, since February 19, 2005 is a Saturday and February 21, 2005 is a holiday, and this paper is timely filed. Reconsideration and allowance of all pending claims are respectfully requested.

In the subject Office Action, claims 1-32 were rejected under 35 U.S.C. §112 second paragraph. Moreover, claims 1-7, 9-10, 16-22 and 24-25 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Publication No. 2001/0014905 A1 to Onodera. In addition, claims 8, 11-12, 23, 26-27 and 31-32 were rejected under 35 U.S.C. §103(a) as being unpatentable over Onodera in view of U.S. Patent No. 6,269,391 to Gillespie; claims 13-14 and 28-29 were rejected under 35 U.S.C. §103(a) as being unpatentable over Onodera in view of U.S. Publication No. 2003/0014466 A1 to Berger et al.; and claims 15 and 30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Onodera in view of Berger et al. and further in view of Gillespie.

Applicants respectfully traverse the Examiner's rejections to the extent that they are maintained. Applicants have amended claims 1, 13 and 28, and have added dependent claim 33. In amended Fig. 3, the "Yes" and "No" path language of block 176 has been switched to make it consistent with the Application text on page 16 at lines 17-19. Applicants respectfully submit that no new matter is being added by the above amendments, as the amendments are fully supported in the specification, drawings and claims as originally filed.

As an initial matter, Applicants respectfully request that the §112 rejections be withdrawn, as the claims do particularly point out and distinctly claim the subject matter as supported and described in the specification. A method claim, such as claims 1, 13 and 28, does not have to recite associated structure and supporting steps, so long as the

**Amendments to the Drawings:**

The attached sheet of drawings includes changes to Fig. 3. This sheet, which includes Fig. 3, replaces the original sheet including Fig. 3.

Attachments: Replacement Sheet

Annotated Sheet Showing Changes

associated structure and processes are described in a specification in a manner that would enable one of skill in the art. *The Regents of the University of California v. Eli Lily & Co.*, 33 F.3d 1526 (Fed. Cir. 1994). The recited language of claims 1, 13 and 28, namely, "waiting," "deferring a yield," "become ready to yield," "second threads becoming ready to yield," "subset" and "abandoning the yield" is described in an enabling manner throughout the specification (respectively, on pg. 14 at line 7, pg. 11 at line 17, pg. 4 at line 18, pg. 4 at line 20, pg. 11 at line 17, pg. 5 at line 3, among others). As a consequence, it is unnecessary to further limit these method claims by describing in the claims, for instance, the relative timing of yields or the processes by which a subset of the plurality of threads was designated, or what specific hardware function initiates deferring a yield.

With regard to claims 16 and 31, these apparatus claims clearly recite structural elements for implementing embodiments of the invention, e.g., "a computer" and "a program." Moreover, the claims and rest of the specification sufficiently describe cooperative relationships between elements, such as "resources" on a "multithreaded CPU," and "threads" within a "common virtual space." The Examiner is urged to read at least the section of the specification, entitled "Multithreaded CPU Yield," to find support for the above claimed processes and associated structures. Applicants therefore respectfully request withdrawal of all of the §112 rejections.

Of note, all pending claims are rejected at least in part on the Onodera reference, which has a publication date of August 16, 2001<sup>1</sup>. Applicants respectfully submit that the Onodera reference is not prior art under 35 U.S.C. §102(a), as it was not published in the

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<sup>1</sup> Applicants also note that the priority document for the Onodera reference, Japanese Patent Application No. 11-371730, was first published as JP2001188685 on July 10, 2001. Applicants note that the enclosed Declarations also establish a date of invention prior to this publication, and as such, this publication is not citeable against the instant application. A Supplemental Information Disclosure Statement citing this publication is enclosed herewith, along with a check for \$180.00 for the requisite fee.

United States before Applicants' date of invention, which was prior to August 16, 2001. In support of Applicants' prior date of invention, Applicants have enclosed herewith the Declarations of all three inventors, William Joseph Armstrong, Chris Francois and Naresh Nayar, under 37 C.F.R. § 1.131, as well as a Rule 1.131 Declaration from the undersigned, Douglas A. Scholer, which establish a date of invention that is prior to the publication date of August 16, 2001 for the Onodera reference.

In particular, the enclosed Declarations establish conception prior to the publication of the Onodera reference, coupled with diligence and constructive reduction to practice on the part of the inventors. As such, the Onodera reference was not published prior to Applicants' date of invention, and thus does not qualify as prior art under 35 U.S.C. § 102(a). As cited in the Office Action, Onodera only qualifies as prior art under 35 U.S.C. § 102(e)(1).

Now regarding the § 102(e) rejection of the Office Action, and more particularly, the rejection of independent claim 1, this claim generally recites a method for sharing resources on a multithreaded CPU. As described on page 1-2 of the application, a multithreaded CPU is a processor chip that can execute two or more threads in hardware. The claimed invention specifically addresses programming constraints in conventional multithreaded environments that have conventionally hindered CPU resource sharing. For instance, all threads executing on a multithreaded CPU are required to execute within a common virtual space, such as a partition. The claimed invention enables resource sharing despite such constraints by deferring a yield of a first thread executing on the multithreaded CPU, while waiting for at least a second thread executing on the multithreaded CPU to become ready to yield, and yielding the first thread in response to at least the second thread becoming ready to yield.

Onodera fails to teach this claimed feature. The absence of such a teaching within Onodera speaks to its disparate purpose, which is to provide a compound lock method for a conventional, (non-multithreaded) "uni-processor" (pg. 6 at paragraph 40).

Significantly, Onodera does not contemplate multithreaded processors and the associated programming constraints addressed by Applicants' invention. In fact, Onodera may generally be described as the type of lock mechanism described in the background of the present application at pg. 3, beginning at line 7. As such, the lock processes of Onodera could actually complement those of the present invention, for instance, at block 163 of Applicants' Fig. 3.

Consequently, Onodera fails to teach each and every element of claim 1, and Applicants respectfully request that the §102(e) rejection of claim 1 be withdrawn. Furthermore, as discussed in greater detail below, Onodera is not citeable against claim 1 in an obviousness rejection pursuant to 35 U.S.C. § 103(c). Reconsideration and allowance of claim 1, as well as of claims 2-7, 9 and 10 which depend therefrom, are respectfully requested.

Independent claim 16 is a computer hardware and software implementation that includes features similar to those recited in claim 1. These features include the multithreaded CPU that is neither taught nor suggested by Onodera. Applicants consequently request reconsideration and allowance of claim 16, as well as of claims 17-22, 24 and 25 that depend therefrom.

Independent claim 31 is a program product implementation that includes features similar to those recited in claim 1. These features similarly include, among others, deferring a yield of a first thread executing on the multithreaded CPU. Since there is no such teaching present in Onodera, Applicants respectfully request reconsideration and allowance of claim 31, as well as of claim 32 that depends therefrom.

Now regarding the §103 rejections of the Office Action, Applicants submit that Onodera, which forms the basis of every §103 rejection, is not properly citeable against the instant Application pursuant to 35 U.S.C. §103(c). Under 35 U.S.C. §103(c), with respect to applications filed on or after November 29, 1999, a reference is disqualified as prior art if two conditions are met: (1) the reference is qualified as prior art only under

35 U.S.C. §102(e), (f), or (g), and (2) the reference is commonly owned with the claimed invention (or subject to an obligation to be assigned to the same entity) at the time the invention was made.

With respect to the first requirement for applying 35 U.S.C. §103(c), the Onodera reference was published after the date of invention for the instant application. As such, the Onodera reference is only available as prior art under 35 U.S.C. §102(e), and 35 U.S.C. §103(c) applies to the reference.

With respect to the second requirement for applying 35 U.S.C. §103(c), Applicants assert that the claimed invention and the Onodera reference were commonly owned by (or subject to an obligation to assign to) International Business Machines Corporation. As evidence of this common ownership, an assignment for the instant application is recorded at Reel/Frame 012443/0516 of the U.S. Patent and Trademark Office Assignment Branch, while an assignment for the Onodera reference is recorded at Reel/Frame 011402/0202.

Applicants therefore respectfully submit that the Onodera reference, being *prima facie* prior art only under 35 U.S.C. 102(e), is not properly citeable against the instant application in an obviousness rejection due to the common ownership of the reference and the application. Moreover, Onodera forms the basis of every §103 rejection in the Office Action. Accordingly, the §103 rejections should be withdrawn, and Applicants request reconsideration and allowance of claims 8, 11-14, 23, 27-29 and 31-32.

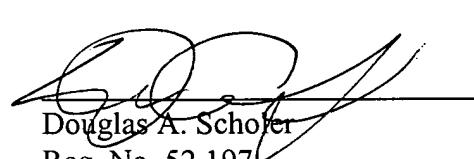
Moreover, although Onodera is removable by virtue of the § 103(c) exception, Applicants nonetheless note that substantive rejection based on Onodera would still fail because it suggests yields only for (non-multithreaded) "uni-processor" CPU's (pg. 6 at paragraph 40), not a multithreaded CPU as claimed. The Examiner has failed to provide any objective evidence that one of ordinary skill in the art would be motivated to modify Onodera to operate in the claimed manner on a multithreaded CPU. Lacking such evidence, the Examiner's rejection should not stand.

Applicants consequently submit that all pending claims are novel and non-obvious over the prior art of record. Reconsideration and allowance of all pending claims are therefore respectfully requested. If the Examiner has any questions regarding the foregoing, or which might otherwise further this case onto allowance, the Examiner may contact the undersigned at (513) 241-2324. Moreover, if any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

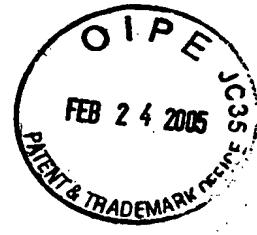
Respectfully submitted,

3/22/05

Date



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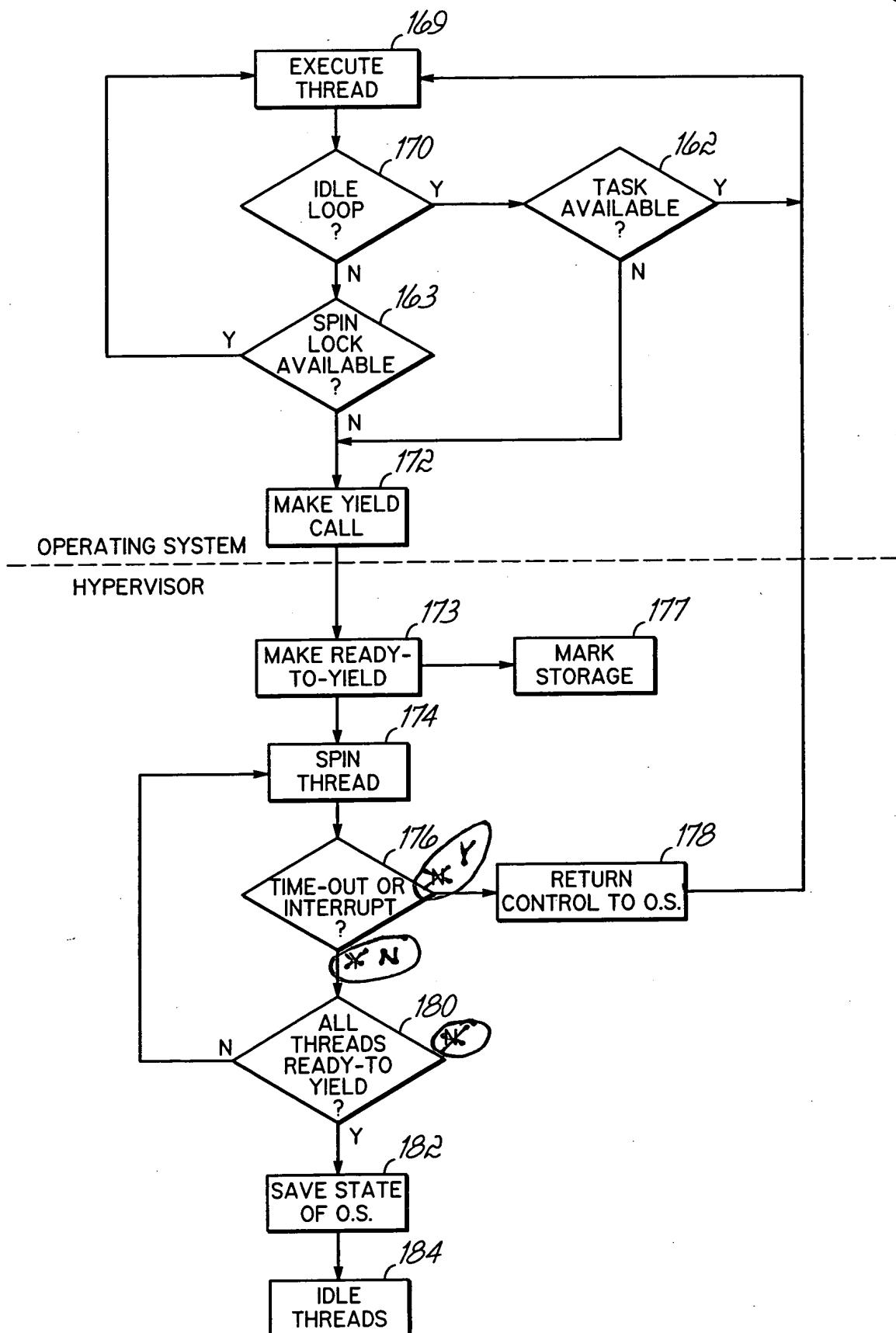


FIG. 3